PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: ALBERT S. MICHALIK 704 - 228TH AVENUE NE, SUITE 193 SAMMAMISH, WA 98074	**PCT** NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION (PCT Rule 44.1)
	Date of mailing *(day/month/year)*
Applicant's or agent's file reference 3482	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US04/25723	International filing date *(day/month/year)* 28 July 2004 (28.07.2004)
Applicant MICROSOFT CORPORATION	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
   1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Eric Woods Telephone No. 703-305-0263

Form PCT/ISA/220 (January 2004)   *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: ALBERT S. MICHALIK 704 - 228TH AVENUE NE, SUITE 193 SAMMAMISH, WA 98074	# PCT NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION (PCT Rule 44.1)

	Date of mailing *(day/month/year)* **16 FEB 2005**
Applicant's or agent's file reference 3482	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US04/25725	International filing date *(day/month/year)* 28 July 2004 (28.07.2004)
Applicant MICROSOFT CORPORATION	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   > **When?** The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   > **Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes
   > 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

   > For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

   Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis to the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Eric Woods Telephone No. 703-305-0263

Form PCT/ISA/220 (January 2004)   *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 3482	**FOR FURTHER** **ACTION** see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US04/25723	International filing date *(day/month/year)* 28 July 2004 (28.07.2004)	(Earliest) Priority Date *(day/month/year)* 23 October 2003 (23.10.2003)
Applicant MICROSOFT CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

    ☒   It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the Report**
   a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

       ☐   The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. ☐   With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐   Certain claims were found unsearchable (See Box No. II)

3. ☐   Unity of invention is lacking (See Box No. III)

4. With regard to the title,

       ☒   the text is approved as submitted by the applicant.

       ☐   the text has been established by this Authority to read as follows:

5. With regard to the abstract,

       ☒   the text is approved as submitted by the applicant.

       ☐   the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,
   a. the figure of the drawings to be published with the abstract is Figure No. 12.

       ☐   as suggested by the applicant.

       ☐   as selected by this Authority, because the applicant failed to suggest a figure.

       ☒   as selected by this Authority, because this figure better characterizes the invention.

   b. ☐   none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/25723

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G09G 5/00
US CL : 345/619

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 345/619-631

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
US Patent database, US Pre-grant Publication, EPO, JPO, DERWENT

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Google and Google Scholar, terms "SVG specification" and terms "X3D specification compositing rendering"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/0120823 A1 (KIM et al) 26 June 2003 (26.06.2003), pages 1-4 particularly pg. 1	1-54, 56-62, 65
Y	WO 02/076058 A3 (STEELE et al) 26 September 2002 (26.09.2002), particularly Figs. 6-9, and pgs. 7-9, especially pages 12-14	1-54, 56-62, 65
Y	SVG (Scalable Vector Graphics) v1.1 Specification, 14 January 2003 (14.01.2003) found at http://www.w3.org/TR/2003/REC-SVG11-20030114/ sections 1, 2, 4, 5, 9, 11-14, 16, and 19, particularly sections 9.1, 11.1-11.2, 14.2-14.4, and 192.	6-28, 30-54, 56-62, 65
Y	X3D specification, found at http://www.web3d.org/x3d/specifications/, particularly sections 6.1-6.3 and section 18, final draft version released 29 July 2002 (29.07.2002, http://www.3dlinks.com/spectrum/issues/spectrum-jul-29-02.cfm for date confirmation)	28-30
Y	US 2003/0005045 A1 (TANIMOTO) 02 January 2003 (02.01.2003), pages 1-7, particularly pgs. 1 and 4-5	1, 36, 39-40
A	US 2003/0031260 A1 (TABATABAI et al) 13 February 2003 (13.02.2003), see entire document.	36-42
Y, P	US 2003/0126557 A1 (YARDUMIAN et al) 03 July 2003 (03.06.2003), see entire document.	22-30

☐ Further documents are listed in the continuation of Box C.   ☐ See patent family annex.

*	Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search	Date of mailing of the international search report
23 January 2005 (23.01.2005)	16 FEB 2005

Name and mailing address of the ISA/US	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450	Eric Woods
Facsimile No. (703) 305-3230	Telephone No. 703-305-0263

Form PCT/ISA/210 (second sheet) (January 2004)

PATENT COOPERATION TREATY

To: ALBERT S. MICHALIK 704 - 228TH AVENUE NE. SUITE 193 SAMMAMISH. WA 98074	**PCT** WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43*bis*.1)

	Date of mailing (*day/month/year*)	**16 FEB 2005**

Applicant' s or agent' s file reference	**FOR FURTHER ACTION** See paragraph 2 below	
3482		

International application No.	International filing date (*day/month/year*)	Priority date (*day/month/year*)
PCT/US04/25723	28 July 2004 (28.07.2004)	23 October 2003 (23.10.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): G09G 5/00 and US Cl.: 345/619

Applicant
MICROSOFT CORPORATION

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1. This opinion contains indications relating to the following items:

- ☒ Box No. I   Basis of the opinion
- ☐ Box No. II   Priority
- ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV   Lack of unity of invention
- ☒ Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty. inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI   Certain documents cited
- ☒ Box No. VII   Certain defects in the international application
- ☒ Box No. VIII   Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Eric Woods Telephone No. 703-305-0263

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

    a. type of material

        ☐ a sequence listing

        ☐ table(s) related to the sequence listing

    b. format of material

        ☐ in written format

        ☐ in computer readable form

    c. time of filing/furnishing

        ☐ contained in international application as filed.

        ☐ filed together with the international application in computer readable form.

        ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 1-54, 56-62, 65	YES
	Claims NONE	NO
Inventive step (IS)	Claims NONE	YES
	Claims 1-54, 56-62, 65	NO
Industrial applicability (IA)	Claims 1-54, 56-62, 65	YES
	Claims NONE	NO

2. Citations and explanations:

Please See Continuation Sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 56-62 and 65 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: they are misnumbered and claims 55 and 63-64 do not exist.

Claim 37 is objected to because it is dependent on claim 26, where it should be dependent on claim 36, otherwise there would not be any antecedent basis for claimed elements.

Claim 56 is objected to because there is a single letter 'd' on the third line that should not be present.

Box No. VIII   Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 6-65 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 6-65 are indefinite for the following reason(s):

-Claims 6-65 recite the term 'a visual' where the term is undefined, and later claims use terms like 'visual element', 'visual object', et cetera and it is impossible to ascertain the scope of the claimed matter;

-Claim 15 recites the term 'path' where the specification supports multiple meanings for this term - both the path of visual elements during an animation, and the more commonly used technical term 'path' such as is used in the SVG specification, where it means the path taken between a set of points to define a shape or bounding box;

-Claim 20 recites the term 'interface' and it is unclear what the intended meaning of 'interface' is in the context of the specification, because applicant refers to the SVG specification, wherein an 'interface' is a programming construct - that is, an interface implemented for elements, wherein it is unclear whether that is intended meaning or a generalized interface (hardware or software) is intended;

-Claims 4 and 26-27 recite the term 'context' in this claim. In the SVG specification, the term 'context' is not specifically set forth and applicant does not provide a clear basis of the definition. Context can relate to the device-specific drawing information and capabilities, as set forth by various references; it can be a term relating specifically to the properties and metadata associated with various visual elements; it can be many things;

-Claim 39 recites the term 'collection object' and it is unknown how such an object would differ from the 'container object' recited in the parent claim 36 to this particular claim and the specification does not offer a separate definition for such an object, and it is unknown what elements would be in such a 'collection object'.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-5, 22-23, 30, 33, 35, and 43 lack an inventive step under PCT Article 33(3) as being obvious over Kim et al (US Pre-grant Publication 2004/0120823 A1) in view of Steele et al (WO 02/076058 and US Priority to 2001 from US Pre-grant Publication 2004/0110490 A1). Kim Fig. 2 clearly shows that the system receives 3D data in X3D format, which is known to be in a markup language [0004-0008]. X3D is known to one of ordinary skill in the art to be the next generation of the VRML (virtual reality markup language) and to accept and be an extension of XML (extensible markup language). Next, the X3D browser - element 140 in Figs. 1 and 2, makes function call based on information that it obtains when it sends out requests for data. Further, see Fig. 3, where clearly the system is shown to receive user events and data from the user interface. Clearly, these represent function calls via an interface. Steele Fig. 2, element 210 converter - see Fig. 3 for enlarged version. with SVG (Scalable Vector Graphics markup language, a subset of XML (eXtendable Markup Language) conversion shown in Fig. 6, SVG is *prima facie* a markup language [see 0041]. Clearly, the converter receives function calls through the interface, e.g. the application 205 sends function calls to the converter for graphics data, which are then routed through the converter 210 - again, it is a fundamental of the computer art that applications sending data through other programs, particularly in this kind of a context. Kim [0007-0008] clearly teaches the use of a scene graph and that X3D requires the construction of such scene graphs from primitives.

Kim further teaches that the user can move through a scene. which clearly establishes that a user is navigating and the scene is constantly being re-rendered, which *prima facie* requires data in the scene graph to be modified. Kim can also use MPEG-4. which clearly involves animation and modification of data in a scene graph.(Steele uses SVG, and teaches the decomposition of graphic data into tree structures in Fig. 7. Further, Fig. 8 clearly illustrates what happens when the SVG animation language is transformed into two sets of output language data. Clearly, as Fig. 9 illustrates, animation is done with SVG on a routine basis and the translation is shown in Fig. 6. The tree of Fig. 7 is clearly a form of scene graph in the broad definition set forth above. Clearly, such a tree is a "scene graph". Thusly and *prima facie* obviously, the animation shown in Fig. 9 would cause data in a scene graph to be modified as the object was translated and the data structure containing locations and other information would changed. Thusly, reference Kim teaches all the limitations of the above claim, but does not expressly teach the modification of data in the scene graph, although. as set forth above, such functionality is inherent in the reference.

Reference Steele clearly teaches how multimedia is converted and formatted for use for multiple devices. Reference Kim teaches the use of client 100 with X3D browser 110 over communication network 150 [0015, 0018, 0020]. Clearly, a portable device could fulfill this device (e.g. advanced PDA, cellular phone, or laptop.) Reference Steele teaches portable devices capable of performing advanced graphics functionality such as recited above in [0007-0008] and [0027], which clearly illustrates the invention functioning on a cellular phone in Fig. 27. Further, Steele teaches that his invention can be practiced on portable devices (including computers [0038]) - see Fig. 1 and the devices 105, which would clearly be the clients 100 of Kim and the communications networks would be comparable. Clearly, the references are directed to the same problem-solving area and further as set forth above are analogous art. As such, It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the X3D and graphics system of Steele with the SVG and graphics system of Kim as set forth above, and because they serve complementary and supplementary purposes in how they handle graphics and animation, particularly with respect to the standards they utilize.

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

Claim 30 is taught by the simple XML program shown on the third page labeled as Figure 9.
Claim 33 is taught by Steele, as clearly Steele teaches that all "low-level" programs are kept in the Flash memory, where graphics is obviously done at a low level, as there is no separate graphics chip and "high-level" programs are taught to be applications like e-mail.
Claim 35 is taught by Steele where Steele teaches that trees of visual element trees such as those provided in Figs. 6 and 7, where position is a property of each node to be changed.
Claims 44-45 and 47 have the same grounds of rejection as claim 3, and the only difference is the word 'geometry' substituted for 'shape'.

Claims 6-21, 24-28, 31-33, 34-62, and 65 lack an inventive step under PCT Article 33(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of various sections of the SVG specification.
Claims 6-10 are taught by the SVG specification in sections 11.1-11.7, particularly 11.1.
Claim 41 is a duplicate of claim 6 with the same grounds of rejection.
Claims 50-51 are duplicates of claim 7 with the same grounds for rejection.
Claim 53 is a duplicate of claim 10 with the same grounds for rejection.
Claim 11 is taught by the SVG specification in sections 14.4 and 11.7
Claim 57 is a duplicate of claim 11 with the same grounds of rejection.
Claim 12 is taught by SVG section 11.3.
Claim 58 is a duplicate of claim 12 with the same grounds of rejection.
Claims 13 and 43 are taught by SVG in sections 9.1-9.3.
Claim 14 is taught by SVG in sections 9.1-9.2.
Claim 61 is a duplicate of claim 14 with the same grounds of rejection.
Claim 15 is taught by SVG section 9.5 and Steele in Figures 6 and 7.
Claim 16 is taught by SVG sections 9.5 and 19.2 and Steele Figs. 6-7.
Claim 17 is taught by SVG sections 16.2 and 16.6.
Claim 60 is a duplicate of claim 17 with the same grounds of rejection.
Claim 18 is taught by Steele and SVG section 19.2.
Claim 19 is taught by SVG sections 7.1 and 7.11.
Claim 20 is taught by SVG section 4.3 and Kim Figure 1.
Claim 21 is taught by SVG section 3.1 and section 4 generally in light of Steele Figures 6 and 7.
Claim 24 is taught by SVG section 14.4.
Claim 25 is taught by SVG section 10.1 and the inclusion of the text elements in Steele Fig. 7.
Claim 26 is taught by Steele Figure 7, and SVG 11.1 and 9.1-9.7, and supported by Kim's navigation through a virtual environment.
Claim 59 is a duplicate of claim 26 with the same grounds of rejection.
Claim 27 is taught by SVG section 11.1
Claim 28 is taught by SVG sections (11.1, 3.1, 4.2 - all elements have associated properties) and Steele.
Claim 31 is taught by SVG 19.2, particularly 19.2.2, and Steele Figs. 6 and 9, particularly Fig. 9.
Claim 32 is taught by Steele in Fig. 8 with reference to Fig. 7, where in Fig. 8 the interpolation is shown.
Claim 34 is taught by Steele, as clearly Steele teaches the association of audio data with elements in the scene graph in Fig. 7, and the SVG specification, where section 6.18 teaches aural (audio) style sheets.

Claims 36-39 and 65 lack an inventive step as set forth above in the explanation for claim 1, and Kim [0007-0008] clearly teaches the use of a scene graph and that X3D requires the construction of such scene graphs from primitives. Kim further teaches that the user can move through a scene [0020, 0026], which clearly establishes that a user is navigating and the scene is constantly being re-rendered, which *prima facie* requires data in the scene graph to be modified. Kim can also use MPEG-4, which clearly involves animation and modification of data in a scene graph. Steele uses SVG, and teaches the decomposition of graphic data into tree structures in Figure 7. Further, Fig. 8 clearly illustrates what happens when the SVG animation language is transformed into two sets of output language data. Clearly, as Fig. 9 illustrates, animation is done with SVG on a routine basis and the translation is shown in Fig. 6. The tree of Fig. 7 is clearly a form of scene graph in the broad definition set forth above. Clearly, such a tree is a "scene graph". Thusly and *prima facie* obviously, the animation shown in Fig. 9 would cause data in a scene graph to be modified as the object was translated and the data structure containing locations and other information would changed.
    Reference Steele clearly teaches how multimedia is converted and formatted for use for multiple devices. Reference Kim teaches the use of client 100 with X3D browser 110 over communication network 150 [0015, 0018, 0020]. Clearly, a portable device could fulfill this device (e.g. advanced PDA, cellular phone, or laptop.) Reference Steele teaches portable devices capable of performing advanced graphics functionality such as recited above in [0007-0008] and [0027], which clearly illustrates the invention functioning on a cellular phone in Fig. 27. Further, Steele teaches that his invention can be practiced on portable devices (including computers [0038] - see Fig. 1 and the devices 105, which would clearly be the clients 100 of Kim and the communications networks would be comparable. Clearly, the references are directed to the same problem-solving area and further as set forth above are analogous art. As such, It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the X3D and graphics system of Steele with the SVG and graphics system of Kim as set forth above, and because they serve

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

Supplemental Box
In case the space in any of the preceding boxes is not sufficient.

complementary and supplementary purposes in how they handle graphics and animation, particularly with respect to the standards they utilize.

Claims 37-39 are clearly obvious variations of claim 36 and the container object limitation.

Claim 40: Reference Kim does not expressly teach this limitation, but clearly teaches that users navigate through a virtual environment, which *prima facie* requires that transforms take place to visual objects and new visual objects be inserted (see rejections to claim 2 and 3). Reference Steele teaches this limitation, as for example he teaches the insertion of unique identifiers into media streams [0106], and further [0088] that any visual element or object can modified. Such modifications and insertions *prima facie* must associate code with a suitable / desired insertion as that is the only way either a hierarchy of nodes (e.g. Fig. 7) or single nodes could be logically inserted.

For the second case, if the definition of context is the data associated with a specific element - e.g. the details of the element, its location, color, et cetera, these attributes are inherent in SVG elements as set forth in the rejections above, e.g. sections 11.1, 9.1-9.7, et cetera. Further, Steele teaches the same in Figure 7, where each element has certain properties that would be a drawing context, in the sense that each visual element has those properties associated with it [Steele 0052-0056 and 0059-0061].

As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the X3D and graphics system of Steele with the SVG and graphics system of Kim as set forth above, and because they serve complementary and supplementary purposes in how they handle graphics and animation, particularly with respect to the standards they utilize. (Further, note that since this is performed by software, *prima facie* 'code' that is software elements, would be invoked to perform any recited task.)

Claim 42 is taught by SVG sections 11.4 and 11.6.
Claim 46 is taught by SVG section 7.4 under Example Rotate-Scale and further in Steele where Steele states that the tree of nodes in Fig. 7 can be rotated as a group and similar references within Steele.
Claim 48 is taught by SVG section 7.4 under Example Skew.
Claim 49 is taught by SVG section 19.2, particularly 19.2.2, with emphasis on transforms as shown in Steele Figs. 7-9 (all of 9) and Kim's use of X3D.
Claim 52 is taught by SVG sections 11.1, 13.2, and 11.7.
Claim 54 is taught by SVG section 7.11, the 'primitiveUnits' property - also, all the geometric drawing primitives listed in sections 9.1-9.3.
Claim 56 is taught by Steele where Steele teaches animation and the use of audio in Figs. 7 and 8, by SVG where it teaches aural style sheets in 6.18, and by Kim where it uses 3D video which *prima facie* has markup elements via X3D.
Claim 62 is taught by SVG specification in 7.4 under Example Rotate-Scale and methods for associating shapes with visual elements in 9.1 for example.

Claim 29 lacks an inventive step under PCT Article 33(3) as being obvious over the prior art as applied in the immediately preceding paragraph and further in view of the X3D specification. Specifically, the X3D specification sections 18.2.1-18.2.3, 18.3.1, and particularly 18.4.1 teaches the use of 2D images in the 3D environment.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
   "Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."

2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
   "Claims 1 to 15 replaced by amended claims 1 to 11."

3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
   "Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
   "Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."

4. [Where various kinds of amendments are made]:
   "Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.